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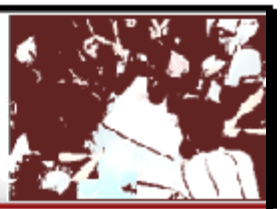

Educational Research and Evaluation at XUSOM

P Ravi Shankar

Department of Medical Education, Xavier University School of Medicine, Oranjestad, Aruba.

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ABSTRACT

Educational evaluation is the process of characterizing and appraising certain aspects of the educational process. Educational research attempts to solve a problem, gathers new data and requires careful observation, rigorous analysis and expertise. Xavier University School of Medicine follows an integrated, organ system-based curriculum during the basic science years of the undergraduate medical (MD) course. Educational evaluations are routinely conducted in the institution and the results are used to further improve teaching-learning. A number of educational research projects have been conducted at the institution over the last two years and the results have been published. The results from these studies are shared with faculty members and the curriculum committee and utilized to further improve teaching-learning. In this article the author mentions some of these research studies and also addresses facilitating and hindering factors for educational research in the institution.

CORRESPONDING AUTHOR: Professor Dr. P. Ravi Shankar, Xavier University School of Medicine, #23, Santa Helenastraat, Oranjestad, Aruba. E-mail: ravi.dr.shankar@gmail.com

Gary Anderson has highlighted ten features of educational research (ER) [1]. ER attempts to solve a problem, gathers new data from primary sources or uses existing data for a new purpose. ER like other research requires careful observation, rigorous analysis and expertise. Research is carefully recorded and reported to others interested in the problem. Educational evaluation is the process of characterizing and appraising certain aspects of the educational process. The findings from an educational evaluation are of primary interest to others in the institution and provide feedback and guidance to faculty members and program planners.

***Medical educators active in research*:** A recent article mentions three characteristics of medical educators who are especially productive in research [2]. These educators are more intrinsically motivated, recognize that collaboration with others increases productivity and exhibit the two key personal qualities of patience and organization. The authors mention eight tips for medical educators to ensure sound, good quality research. These are focus on the best research question, be specific, do not be afraid to advance alone, develop a timeline, ask an expert, first conduct an exploratory study, start research early and research for the right reasons.

***Curriculum innovations at the institution*:** Xavier University School of Medicine (XUSOM) admits students from the United States (US), Canada and other countries to the undergraduate medical (MD) course. Students

complete the basic sciences in Aruba and then do their clinical rotations in the US and Canada. The school shifted to a fully integrated organ system-based curriculum with early clinical exposure from January 2014 [3]. Patient, doctor and society and Healthcare Quality Improvement run concurrently with organ systems during different semesters. Among the modifications were introduction of a medical humanities module for first semester students, greater emphasis on behavioural sciences and medical ethics, introduction of problem-based learning (PBL) sessions, initiating sessions on critical appraisal of scientific literature, starting early clinical exposure and use of standardized patients [4]. The assessment format was modified. In addition to performance in the final exam and quizzes which predominantly use multiple choice questions, student performance during interactive lectures and small group sessions are also assessed. Student performance during assignments, structured viva-voce and in exams using short answer questions is also considered. An integrated curriculum is not common among Caribbean medical schools and these changes to the curriculum and methods of assessment offered opportunities for both educational evaluation and educational research.

***Educational evaluations*:** The school was already conducting anonymous evaluation by students of the faculty and I, as chair of the curriculum committee on the request of the Dean modified the instrument considering the additional faculty responsibility of facilitating small group sessions. Another important evaluation I and certain other senior faculty members conduct is of faculty members during their interactive lectures. Students also anonymously evaluate each system. As XUSOM is a small medical school students are often reluctant to provide demographic information for fear of being identified. No demographic information is collected during the end-of-system evaluations. Student feedback is used to further improve teaching-learning in different systems during the next semester. A team of faculty members analyses the feedback and provides a report to the curriculum committee and the system chairs. At present responses are collected using paper forms which makes the process more tedious as the team has to first enter the data in a statistical package and then analyse it. We are considering using online survey software like Survey Monkey to capture student responses which will eliminate the hassle of re-entering the data. Educational evaluation will primarily be of interest to educators and faculty members in the same institution as it provides valuable feedback on the curriculum and teaching-learning and can provide suggestions for further improvement. In many cases however, the instruments used and the results of educational evaluations may also be of interest to educators in other institutions. Educational research studies would be of interest to educators and researchers in other institutions but as I have mentioned there may be a continuum between educational evaluations and educational research which should be considered.

***Initial educational research studies*:** Modifications to the curriculum and assessment methods provided opportunities for educational research and experience sharing. Our experience with the integrated curriculum and assessment will be of interest to educators in other medical schools in the Caribbean and other regions. In a publication in 2013 we discussed proposed innovations in the medical school curriculum. As mentioned previously we are offering a medical humanities module to all first semester students and student feedback about the module was obtained. The respondents rated their perception regarding the enjoyment and effectiveness of different teaching-learning methodologies employed during the module. Their degree of agreement with a set of fifteen statements was noted and suggestions for further improvement of the module were obtained. Conducting new educational modules and obtaining student feedback about the innovation could be an area of educational research. Students as future doctors should be able to communicate in an effective and empathetic manner with patients and developing appropriate communication skills is important. The Communication Skills Attitude Scale (CSAS) provides information about student attitudes towards communication skills learning. Attitudes were positive overall but

negative attitudes were also noted. Table 1 details the different educational research conducted at the institution over the last two years.

***Educational environment and small group sessions*:** The Dundee Ready Educational Environment Measure (DREEM) has been widely used to study the educational environment at medical and other health science schools. Strengths and deficiencies of the learning environment can be studied and suggestions for further improvement obtained. We first studied the educational environment using DREEM in June 2013 and again after implementation of some of the curricular innovations in January 2014 [3]. Studies on the educational environment using validated instruments would be of benefit to educators in health professions schools. Problem-based learning (PBL) sessions are regularly conducted at the institution. The Tutorial Group Effectiveness Instrument (TGEI) provides objective information about the effectiveness of small groups during PBL sessions. Respondents' perception about the small groups was positive though certain suggestions for improvement were also obtained [5].

***Crossing the river, prescribing skills*:** To introduce students to each other, the faculty, and the curriculum and familiarize them with group work and small group learning, a two day orientation program is conducted at the institution. During this program we use an activity 'Crossing the river' to introduce students to small group work. The activity has been used in a variety of settings to promote teamwork. Our description of the activity may be of interest to educators in various settings [6]. Prescribing skills have traditionally received less attention in medical education and to strengthen these skills we introduced the personal (P) drug selection process and also conduct sessions to sensitize students to pharmaceutical promotion. The personal drug selection process at the institution has been described in a recent article [7]. Details of the personal drug selection process and sharing of experience about this activity will be of special interest to pharmacologists and teachers of therapeutics.

Approach to learning, learning styles, sources of stress: We also studied the approach to learning and learning styles among students. Student feedback about the integrated curriculum was obtained in March 2014 [8]. The qualitative study provided interesting insights both to faculty in the school and to educators in other settings. Challenges in shifting to an integrated curriculum were examined in a recent article. Sources of stress and coping strategies employed by health science students is of importance to educators. At XUSOM, the major sources of stress were related to academics and group activities [9]. Stress can be a major area of study with implications for student well-being. We have also written about the use of standardized patients in the institution and about an online nutrition in medicine module provided by the University of North Carolina which we offer to our students.

Modifications to the curriculum, newer teaching-learning approaches, and developing and strengthening different skills and competencies among students at the institution have provided opportunities to conduct both educational evaluation and educational research at the institution which have been described in previous paragraphs.

***Facilitating and hindering factors*:** Like in other institutions there are both facilitating and hindering factors for conducting educational research at XUSOM. Among the facilitating factors is strong support for ER by the academic leadership, and interest in using evaluation and research findings to improve student learning. There are also hindering factors. Caribbean medical schools have traditionally concentrated less on research and more on teaching-learning. Traditional large group teaching methods are common. Encouraging research and considering research as an important activity for faculty is still lacking. Research could be an important area of emphasis for accrediting agencies. At XUSOM only a few faculty are interested in research and most find balancing research with a

heavy teaching load challenging. XUSOM is a small medical school and as mentioned previously some students are apprehensive about completing questionnaires and providing demographic information because of an apprehension of being identified. While student research is encouraged (Considering the preference given to students with research experience for admission to residency programs) only few schools have been successful in encouraging student research and publication. At St. George's University School of Medicine in Grenada a web-based Medical Student Research Institute started in 2009 promotes remote research collaboration between students and faculty [10]. Many offshore Caribbean medical schools lack facilities for basic research and active research programs. Most have invested less on research infrastructure. Educational research does not require expensive infrastructure and support facility which is a positive factor.

Despite these limitations we are confident of developing a strong program of educational research and evaluation at the institution.

Reference

1. Anderson GJ, Arsenault N. Fundamentals of Educational Research. London, United Kingdom: Routledge; 1998. 273 p. ISBN 978-0-203-97822-1.
2. Markert RJ. Getting started on your research: Practical advice for medical educators. Teach Learn Med. 2010;22: 317-8.
3. Shankar PR, Bharti R, Ramireddy R, Balasubramanium R, Nuguri V. Students' perception of the learning environment at Xavier University School of Medicine, Aruba: a follow up study. J Educ Eval Health Prof 2014;11:9. DOI:10.3352/jeehp.2014.11.9
4. Shankar P, Dubey AK. 'Modernizing' the Basic Sciences MD program at XUSOM, Aruba**.** WebmedCentral Medical Education. 2013;4(4): WMC004198.
5. Shankar PR, Nandy A, Balasubramanium R, Chakravarty S. Small group effectiveness during PBL sessions in a Caribbean medical school. J Educ Eval Health Prof. 2014;11:5. DOI: 10.3352/jeehp.2014.11.5
6. Shankar PR. Crossing the river! Education in Medicine Journal. 2014;6(1):e74-5**.** DOI:10.5959/eimj.v6i1.232
7. Shankar PR. Seven Semesters of Personal Drug Selection in a Caribbean Medical School. Education in Medicine Journal 2015;7(2);e80-e82. DOI: 10.5959/eimj.v7i2.359.
8. Shankar PR, Balasubramanium R, Dwivedi NR, Nuguri V. Student feedback about the integrated curriculum in a Caribbean medical school. J Educ Eval Health Prof. 2014;11:23. DOI: 10.3352/jeehp.2014.11.23.
9. Shankar PR, Balasubramanium R, Ramireddy R, Diamante P, Barton B, Dwivedi NR. Stress and coping strategies among premedical and undergraduate basic science medical students in a Caribbean medical school. Education in Medicine Journal. 2014;6(4):E48-E56. DOI: 10.5959/eimj.v6i4.287.
10. Chamberlain RS, Klaassen Z, Meadows MC, Weitzman S, Loukas M. St George's University's medical Student Research Institute: A Novel, virtual Programme for Medical research Collaboration. West Indian Med J. 2014;63(1):81-7. DOI: 10.7727/wimj.2013.022